

Birch Creek Subbasin Assessment



Department of Environmental Quality

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Executive Summary

The federal Clean Water Act (CWA) requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes, pursuant to Section 303 of the CWA, are to adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the nation's waters whenever possible. Section 303(d) of the CWA establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list (a "§303(d) list") of impaired waters. Currently this list must be published every two years. For waters identified on this list, states and tribes must develop a total maximum daily load (TMDL) for the pollutants, set at a level to achieve water quality standards.

This document addresses the water bodies in the Birch Creek Subbasin that have been placed on Idaho's current §303(d) list.

This subbasin assessment (SBA) analysis has been developed to comply with Idaho's TMDL schedule. The assessment describes the physical, biological, and cultural setting; water quality status; pollutant sources; and recent pollution control actions in the Birch Creek Subbasin, located in eastern Central Idaho.

The starting point for this assessment was Idaho's current §303(d) list of water quality limited water bodies. One segment of Birch Creek in the Birch Creek Subbasin was listed on this list. The SBA examines the current status of §303(d) listed waters and defines the extent of impairment and causes of water quality limitation throughout the subbasin.

The hydrology of the Birch Creek subbasin is dominated by Birch Creek and its associated diversion structures for irrigation of farmland and hydropower production on the Snake River plain. A small section of Birch Creek below the hydropower diversion in the southern part of the subbasin is 303(d) listed for flow alteration, habitat alteration, sediment and nutrients. Flow in Birch Creek below the hydropower diversion has been eliminated by a permanent control structure that diverts water for hydropower production at a power plant several miles to the east. Water is not returned to the natural channel after flowing through the power plant, and is consumed for irrigation. Water not used for irrigation during winter is infiltrated in trenches above the Idaho National Laboratory's Test Area North facility for flood control and aquifer recharge. This dewatering of the natural channel renders any listing other than flow alteration meaningless. Because flow alteration is not a pollutant that is subject to total maximum daily load calculations, no TMDL has been completed for the listed segment of Birch Creek, but it is recommended that this stream reach remain on the 303d list for flow alteration, and the listing for nutrients, sediment and habitat alteration be dropped.

Birch Creek was added to the 1998 303(d) list for flow alteration, habitat alteration, sediment and nutrients by the Idaho Department of Environmental Quality (DEQ). A subsequent inspection of the water body revealed that the primary water quality problem is likely the absence of flow. Birch Creek is in a predominantly rangeland agricultural region. Little water quality data was available for Birch Creek, however, DEQ water quality data from the Beneficial Use Reconnaissance Project shows that other perennial tributaries, and Birch

Creek above the hydropower diversion, are in full support of beneficial uses; hence no TMDLs to restore beneficial uses have been developed in the Birch Creek watershed.

Other perennial waters evaluated in this subbasin assessment include Willow Creek and Cottonwood Creek, in the northern watershed near the Lemhi River watershed, and Pass Creek, in the western watershed. These streams have flows less than 1cfs throughout most of the year. All of the perennial waters in the Birch Creek watershed arise primarily from spring sources and infiltrate prior to connecting with any other surface waters. It was not possible to gain access to Cottonwood Creek because it exists almost entirely on private property with the exception of the source springs that arise on the Eighteenmile Wilderness just above the private boundary. There was no access to Cottonwood Creek on private property, though there was no evidence of water quality issues on this creek.

Subbasin at a Glance

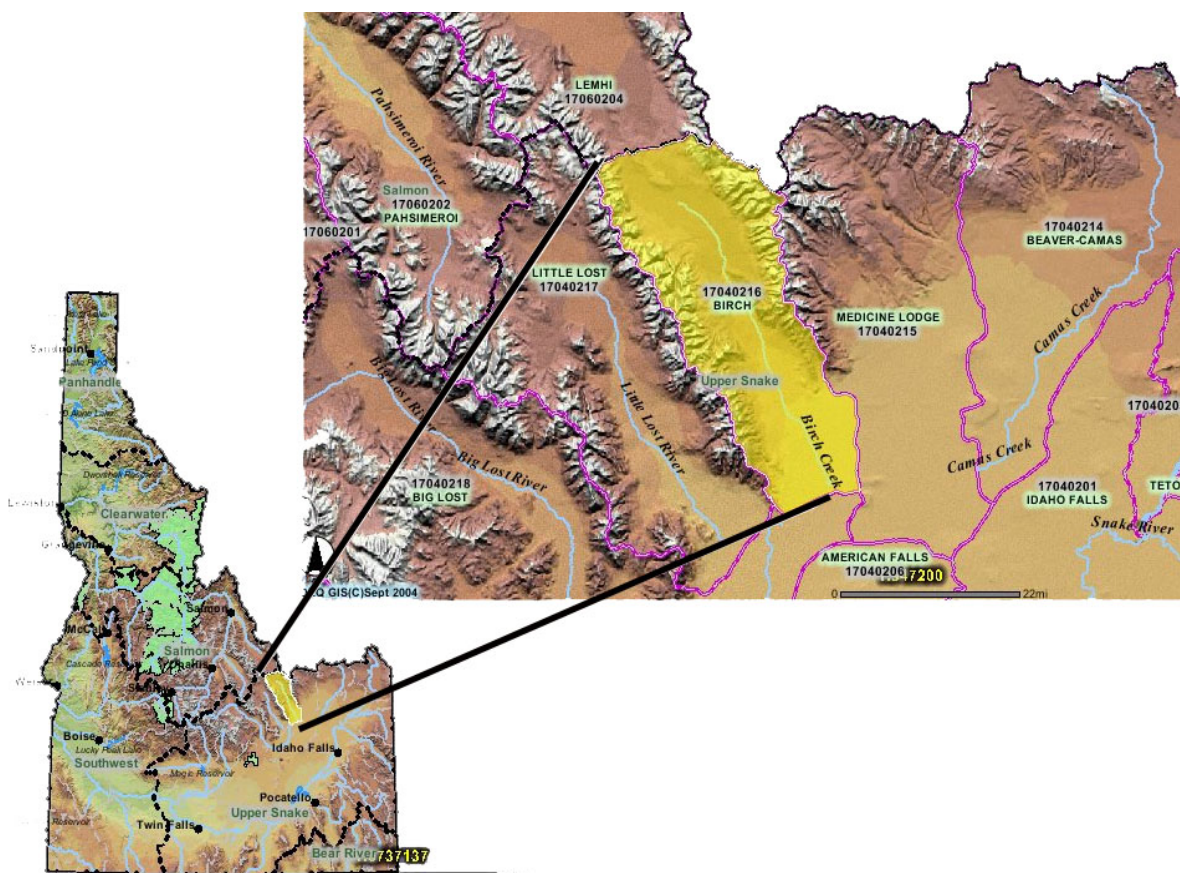


Figure A. Birch Creek watershed (Hydrologic Unit Code, HUC, 17040216)

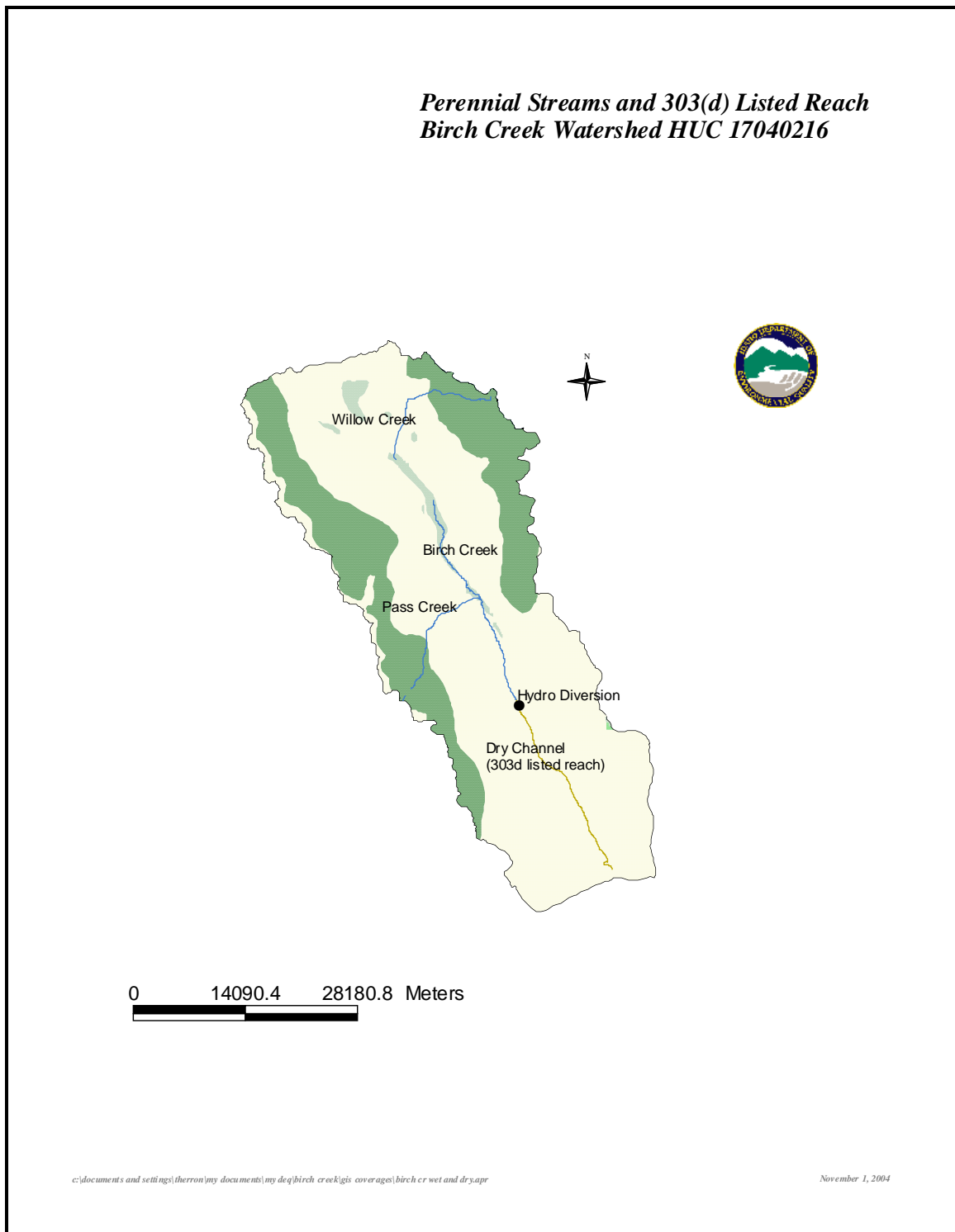


Figure B. Perennial streams and the listed reach in the Birch Creek watershed.

Key Findings

Table A. Summary of assessment outcomes.

Water Body Segment/ AU	Pollutant	TMDL(s) Completed	Recommended Changes to §303(d) List	Justification
Birch Creek-Reno Ditch to Playas	Nutrients, Sediment, Flow Alteration, Habitat Alteration	No	List For Flow Alteration	Channel is dry due to permanent diversion

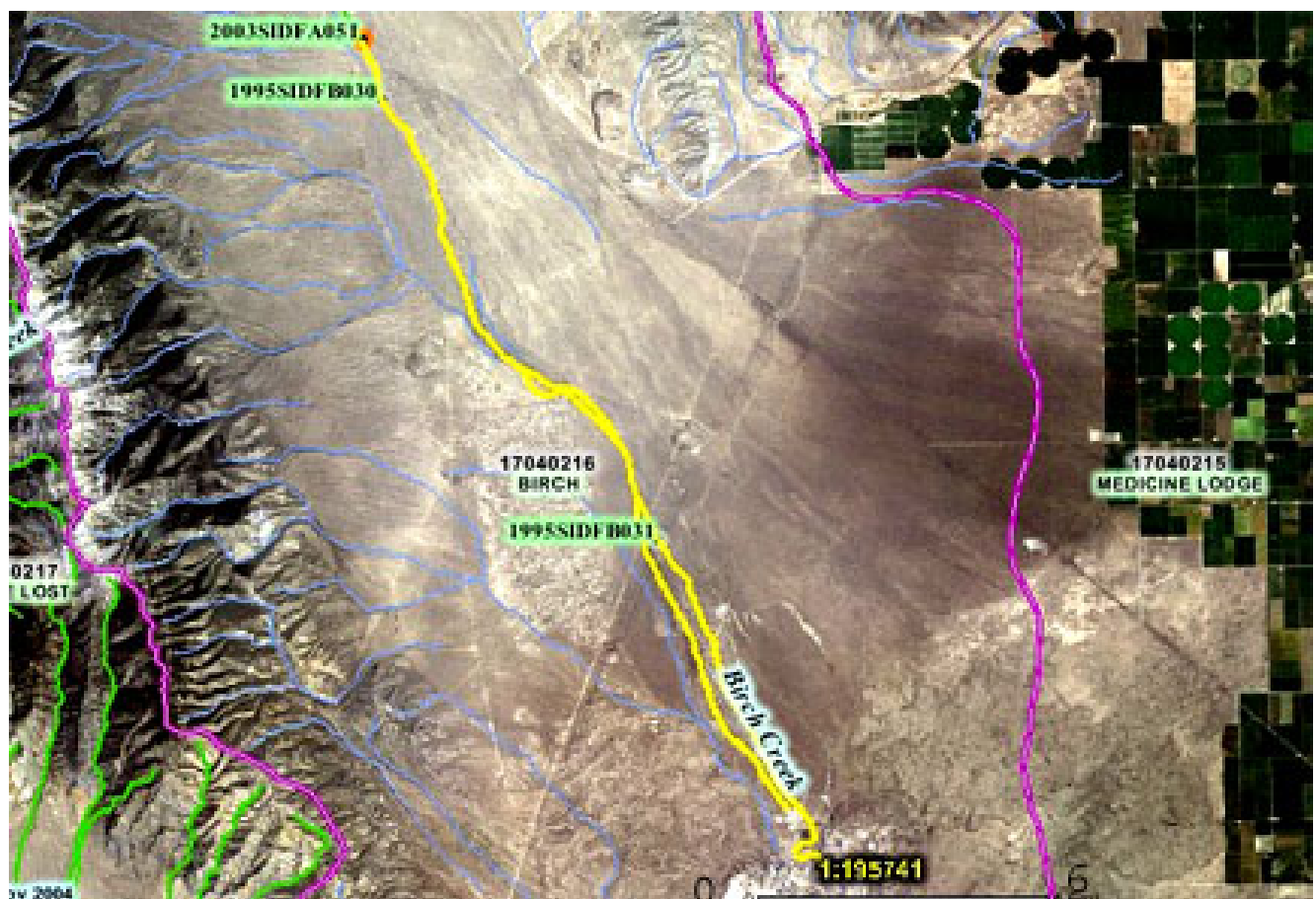


Figure C. §303(d) listed reach of Birch Creek.